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The Global Challenge of SARS: Health Agencies Mobilize to Control Disease Spread

An acute respiratory illness known as SARS (severe acute respiratory syndrome) has aroused worldwide concern following a March 12 alert by the World Health Organization. Initially reported from Hong Kong, Vietnam, and southern China, SARS spread rapidly via travelers to other countries in Asia, Europe, and North America.

As of May 21, WHO reports 7,956 cases of SARS globally. Countries most affected thus far are China and Taiwan. More than 90% of all cases have been reported from China, while illness imported from Hong Kong to Toronto has resulted in 140 confirmed cases of SARS among family members and health care workers, and 23 deaths. The United States has 283 suspected and 66 probable cases (see case definition, Table 1 on page 2), while Washington State has 29 suspected and two probable cases.

International, state, and local health agencies have launched intensive investigations of SARS in the nearly three months since the disease was recognized. Areas affected by SARS and recommendations for control are evolving, and travelers should consult the Centers for Disease Control and Prevention (CDC) web site for the most current travel advisories and alerts.

A New Coronavirus

Collaborative international laboratory investigations implicate a new coronavirus with a unique genetic sequence as the etiologic agent for SARS. Some known coronaviruses are common causes of mild upper respiratory infections in humans, while others are pathogens for animals.

The CDC rapidly developed laboratory tests for the coronavirus; these tests are available on a limited basis for epidemiologic investigations. The CDC frequently updates the case definition for SARS (see http://www.cdc.gov/ncidod/sars/casedefinition.htm and Table 1, page 2).

The usual incubation period for SARS is two to seven days, but may be as long as 10 days. In general, SARS begins with the acute onset of fever. Other symptoms may include headache, malaise, body aches, and mild respiratory symptoms. After three to seven days, patients may develop a dry cough and have trouble breathing. In 10% to 20% of cases, respiratory distress will require mechanical ventilation. For persons meeting the current WHO case definition of SARS, mortality ranges from 5% to 20%.

Routine clinical laboratory tests are nonspecific. Chest x-ray may show pneumonia or adult respiratory distress syndrome (ARDS). About half of patients have decreased white counts and low to normal platelet counts, and elevated creatine phosphokinase levels and transaminases.

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Public Awareness of Child Abuse Is Making a Difference

Child abuse prevention researchers estimate that one in five adults in Washington was a victim of abuse as a child.[1] A survey of 504 Washington residents, conducted recently by the Department of Health, found that about half knew of a child who was an abuse victim and 84% of these respondents had taken some action.

"This is good news," said Dr. Maxine Hayes, state health officer. "To prevent child abuse, it is critical that community members neighbors (teachers, and health workers) pay attention and do something to keep our children safe. Remember the African proverb: 'It takes a village to raise a child.'"

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SARS *(from page 1)*

TABLE 1: Updated interim surveillance case definition for severe acute respiratory syndrome (SARS) – United States, May 20, 2003

Clinical Criteria
- Asymptomatic or mild respiratory illness
- Moderate respiratory illness
  - Temperature of >100.4º F (>38º C)*, and
  - One or more clinical findings of respiratory illness (e.g., cough, shortness of breath, difficulty breathing, or hypoxia)
- Severe respiratory illness
  - Temperature of >100.4º F (>38º C)*, and
  - One or more clinical findings of respiratory illness (e.g., cough, shortness of breath, difficulty breathing, or hypoxia), and
  - radiographic evidence of pneumonia, or
  - respiratory distress syndrome, or
  - autopsy findings consistent with pneumonia or respiratory distress syndrome without an identifiable cause

Epidemiologic Criteria
- Travel (including transit in an airport) within 10 days of onset of symptoms to an area with current, recently documented, or suspected community transmission of SARS[†], or
- Close contact[§] within 10 days of onset of symptoms with a person known or suspected to have SARS infection

Laboratory Criteria[¶]
- Confirmed
  - Detection of antibody to SARS-CoV in specimens obtained during acute illness or >21 days after illness onset, or
  - Detection of SARS-CoV RNA by RT-PCR confirmed by a second PCR assay, by using a second aliquot of the specimen and a different set of PCR primers, or
  - Isolation of SARS-CoV
- Negative: absence of antibody to SARS-CoV in convalescent serum obtained >21 days after symptom onset
- Undetermined: laboratory testing either not performed or incomplete

Case Classification**
- Probable case: meets the clinical criteria for severe respiratory illness of unknown etiology with onset since February 1, 2003, and epidemiologic criteria; laboratory criteria confirmed, negative, or undetermined
- Suspect case: meets the clinical criteria for moderate respiratory illness of unknown etiology with onset since February 1, 2003, and epidemiologic criteria; laboratory criteria confirmed, negative, or undetermined

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*A documented temperature of >100.4º F (>38º C) is preferred, but clinical judgment should be used when a fever has not been documented. Reporting authorities might consider other factors (patient report of fever, use of antipyretics, immunosuppression, or lack of access to health care) when patients do not strictly meet the case definition.

[†]Areas with current or recently documented or suspected community transmission of SARS: mainland China and Hong Kong, People's Republic of China; Singapore; Taiwan; Toronto, Canada (through 5/30/03); and Hanoi, Vietnam (through 5/25/03).

[§]Close contact: caring for or lived with a person with SARS or likely direct contact with their respiratory secretions and/or body fluids, e.g., kissing or embracing, sharing eating or drinking utensils, close conversation (<3 feet), physical examination, and any other direct physical contact. Close contact does not include activities such as walking by a person or sitting across a waiting room or office for a brief period of time.

[¶]Laboratory assays for diagnosis of SARS-CoV infection include ELISA, IFA, and RT-PCR. Negative antibody assay from serum obtained <21 days after illness onset, a negative RT-PCR test, or a negative viral culture do not exclude coronavirus infection and are not considered definitive. A convalescent serum specimen obtained >21 days after illness may be needed to determine infection with SARS-CoV. All SARS diagnostic assays are under evaluation.

**A case may be excluded if an alternative diagnosis fully explains the illness. Asymptomatic SARS-CoV infection or clinical manifestations other than respiratory illness might be identified as more is learned about SARS-CoV infection.

Diagnostic evaluation and supportive care should be provided as appropriate for community-acquired atypical pneumonia. Consult with the local health jurisdiction or DOH epidemiologists about testing by the DOH Public Health Laboratories for patients meeting the case definition. The most efficacious treatment regimen is still unknown. Consult the CDC web site for updates.

Preventing Transmission

SARS appears to be primarily spread by droplets during close contact, but environmental contamination and fomite transmission may play a role. The infectious period is unknown, but it is believed that patients spread the virus only while they are symptomatic. Most cases of SARS in the United States have occurred among previously healthy adults living or traveling in affected areas. A small number of cases involved health care providers who cared for or lived with someone with SARS.

Infection control is key to preventing the spread of SARS. Patients are considered infectious for 10 days after the resolution of the fever. Hospitalized patients who may have SARS should be isolated with standard, contact, airborne, and droplet precautions. Persons not hospitalized who develop symptoms consistent with SARS should stay home and not go to work, school, daycare, or other public places until 10 days after their temperature has returned to normal (no fever) and they no longer have a cough. During this time, a house with a SARS patient should not allow visitors. Patients and household members should follow basic infection control measures such as frequent hand washing and controlling respiratory secretions.

In Washington State, possible cases of SARS should be reported immediately to the local health jurisdiction (map posted at www.doh.wa.gov/LHJMap/LHJMap.htm), or to DOH (206-361-2914 or 1-877-539-4344). Recent travelers to affected areas are advised to monitor their health for at least 10 days after they return. They should contact their health care provider if they become ill with a fever or respiratory symptoms.

For More Information

Further information on SARS is available on the Web at: www.doh.wa.gov/sars/; www.cdc.gov/ncidod/sars/; and www.who.int/csr/sars/en/.

Monthly Surveillance Data by County

April 2003* – Washington State Department of Health

County	E. coli O157:H7	Salmonella	Shigella	Hepatitis A	Hepatitis B	Non-A, Non-B Hepatitis	Meningococcal Disease	Pertussis	Tuberculosis	Chlamydia	Gonorrhea	AIDS	Pesticides†	Lead§#
Adams	0	1	0	1	0	0	0	0	0	5	0	0	1	3/38
Asotin	0	0	0	0	0	0	0	0	0	12	1	0	1	0/0
Benton	0	2	0	0	0	0	0	0	0	23	2	2	0	0/23
Chelan	0	1	1	0	0	0	0	0	0	25	1	0	2	1/23
Clallam	0	0	0	0	0	0	0	0	0	16	0	0	1	0/#
Clark	0	10	1	0	0	0	0	2	1	111	23	0	0	0/14
Columbia	0	0	0	0	0	0	0	1	0	0	0	0	0	0/0
Cowlitz	0	0	0	0	0	0	0	0	0	28	3	0	0	0/16
Douglas	0	0	0	0	0	0	0	0	1	6	0	0	1	0/0
Ferry	0	0	0	0	0	0	0	0	0	0	0	0	0	0/0
Franklin	0	1	0	0	0	0	0	0	1	13	0	0	3	0/47
Garfield	0	0	0	0	0	0	0	0	0	0	0	0	0	0/0
Grant	0	2	1	0	0	0	0	0	2	13	1	0	2	4/102
Grays Harbor	0	1	0	0	1	0	0	0	0	19	1	1	0	1/#
Island	0	2	0	0	0	0	0	1	0	18	2	0	0	0/8
Jefferson	0	0	0	0	0	0	0	0	0	8	0	0	0	0/#
King	3	22	14	4	5	2	2	14	18	456	127	6	4	1/168
Kitsap	0	0	0	0	0	0	0	0	0	67	10	0	0	0/5
Kittitas	0	0	0	0	0	0	0	0	0	11	0	0	0	0/0
Klickitat	0	0	0	0	0	0	0	0	0	1	0	0	0	0/#
Lewis	0	0	0	0	0	0	0	0	0	10	0	0	1	0/0
Lincoln	0	0	0	0	0	0	0	0	0	1	0	1	0	0/0
Mason	0	0	0	0	1	0	0	0	0	12	2	0	0	0/0
Okanogan	0	0	0	0	0	0	0	0	0	12	1	0	3	5/21
Pacific	0	0	0	0	0	0	0	0	0	2	0	0	0	0/0
Pend Oreille	0	1	0	0	0	0	0	0	0	2	0	0	0	0/#
Pierce	0	4	9	1	1	0	1	11	2	231	57	2	3	0/26
San Juan	0	0	0	0	0	0	0	0	0	0	0	0	0	0/0
Skagit	1	0	0	0	0	0	0	8	0	21	2	0	1	0/35
Skamania	0	0	0	0	0	0	0	0	0	0	0	0	0	0/0
Snohomish	1	5	1	0	1	0	1	4	1	122	23	0	1	0/10
Spokane	0	4	0	0	2	1	0	0	0	94	12	3	4	0/22
Stevens	0	0	0	0	0	0	0	0	0	0	0	1	1	0/0
Thurston	0	3	0	0	0	0	0	3	1	46	3	0	2	0/23
Wahkiakum	0	0	0	0	0	0	0	0	0	0	0	0	0	0/#
Walla Walla	0	2	0	0	0	0	0	0	1	8	0	0	0	2/78
Whatcom	0	1	0	2	1	0	0	2	1	20	3	0	0	0/11
Whitman	0	0	0	0	0	0	0	0	0	7	0	0	0	0/0
Yakima	0	4	0	0	0	0	0	0	0	79	10	0	4	0/16
Unknown														0/0

Current Month	5	66	27	8	12	3	4	46	29	1499	284	16	35	17/695
April 2002	1	44	5	13	6	1	11	31	19	1168	206	34	20	13/723
2003 to date	17	151	71	22	26	5	13	129	84	5358	1000	138	69	51/2098
2002 to date	7	85	20	51	17	4	26	110	73	4653	960	171	46	33/1603

* Data are provisional based on reports received as of April 30, unless otherwise noted.
† Unconfirmed reports of illness associated with pesticide exposure.
§# Number of elevated tests (data include unconfirmed reports) / total tests performed (not number of children tested); number of tests per county indicates county of health care provider, not county of residence for children tested; # means fewer than 5 tests performed, number omitted for confidentiality reasons.

WWW Access Tips

Information about what communities can do to help prevent child abuse is available from the Washington Council for the Prevention of Child Abuse and Neglect at www.wcpcan.wa.gov/.

For More Information

The executive summary of the study, *Community Norms about Child Abuse and Neglect*, is available on the DOH web site at http://www.doh.wa.gov under the "C" section of Publications, or call 360-236-4248 to receive a mailed copy of the report.

*epi*TRENDS online

http://www.doh.wa.gov/Publicat/EpiTrends/03_EpiTrends/2003_trend.htm

Child Abuse *(from page 1)*

To measure community awareness of abuse, the Department of Health Family Violence Prevention Workgroup conducted a study using focus groups and a statewide telephone survey coordinated by Dr. Lillian Bensley of the Office of Epidemiology. Through five focus groups, the research team developed a list of 34 behaviors that at least some participants believed constituted abuse. These behaviors included sexual touching or intercourse with a child, punching a child, spanking, driving drunk, leaving a baby in a car, not providing health care, allowing a young child to play outdoors unsupervised, and locking a child in a closet. Then, participants in a statewide telephone survey were asked whether they thought any or all of the behaviors constituted abuse or neglect.

The focus groups and the telephone survey also explored factors that might influence reporting abuse. Among survey respondents who were aware of a child being abused, two in five called Child Protective Services (CPS). One in five talked to the parents, one in six did nothing, one in 14 called police, and one in 16 had befriended the child. Respondents said they were most likely to report sexual abuse, followed by physical abuse, neglect, and then emotional abuse.

Despite the willingness of most Washingtonians to act, child abuse and neglect — even serious cases — often go unreported. Data from community child death review teams in 2000 suggested that for the 67 children for whom abuse or neglect were cited as a factor by the teams, only about 40% of the children had an open CPS case in the year prior to death.

Community child death review teams, funded through the Department of Health, review all unexpected deaths of children, 17 years and younger. These teams have a diverse membership that can include CPS (in the Department of Social and Health Services), public health and mental health professionals, coroner or medical examiner, a physician from the community, and law enforcement and other community partners. These local teams meet periodically and submit their findings quarterly to the Washington State Child Death Review Program at the Department of Health. For more information about child death review, contact Melissa Allen, 360-236-3536.

Everyone's Responsibility

It is everyone's responsibility to protect children and vulnerable adults from harm. The Department of Social and Health Services operates a 24-hour toll-free telephone line to receive reports of abuse of children or vulnerable adults: 1-866-ENDHARM (1-866-363-4276).

WWW Access Tips and For More Information in the left column provide additional contact links for resources and the executive summary of the study, *Community Norms about Child Abuse and Neglect.*

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[1]Bensley LS, Van Eenwyk J, Simmons KW. Self-reported childhood sexual and physical abuse and adult HIV-risk behaviors and heavy drinking. *American Journal of Preventive Medicine* 2000;18:151–158.

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Mary C. Selecky
Secretary

Maxine Hayes, MD, MPH
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Juliet Van Eenwyk, PhD, MS
State Epidemiologist for Non-Infectious Conditions

Jo Hofmann, MD
State Epidemiologist for Communicable Diseases

Sandra L. Marvinney, BA
Managing Editor

Marcia J. Goldoft, MD, MPH
Scientific Editor

Washington State Department of Health

*epi*TRENDS
P.O. Box 47812
Olympia, WA 98504-7812

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